

## REMARKS

Claims 1-9, 11-15 and 17-21 are pending in the present application. Claims 1, 11 and 17 have been amended, Claim 3 has been cancelled, and Claims 22-31 have been added, leaving Claims 1, 2, 4-9, 11-15, and 17-31 for consideration upon entry of the amendment. No new matter has been introduced by these amendments. Reconsideration and allowance of the claims is respectfully requested in view of the above amendments and the following remarks.

1. Claim Rejections Under 35 U.S.C. § 112, second paragraph

Claims 1-9, 11-15, and 17-21 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to point out and distinctly claim the subject matter for the following reasons.

The Examiner has stated that dependent claims 3, 5, 13, and 21 are indefinite because these claims do not require, in the Examiner's opinion, the materials designated as an "impact modifier" recited in the independent claims from which they depend. Claim 3 has been cancelled but Applicants respectfully disagree with regard to Claims 5, 13, and 21.

Claim 21 properly provides limitations for some of the components of Claim 17 by reciting relative amounts of the polyphenylene ether resin, polystyrene resin, and organophosphate. The language of Claim 21 does not exclude in any way the impact modifier recited in Claim 17. Thus, Claim 21 is definite.

Claims 5 and 13 depend from Claims 1 and 11 respectively, and properly provide further limitations to amended Claims 1 and 11. Claims 1 and 11 contain a Markush group

and Claims 5 and 13 merely recite particular elements of the Markush group, namely a polycarbonate resin and an acrylonitrile-butadiene-styrene resin, as well as define the flame retardant to be an organophosphate. Contrary to the Examiner's statement, Applicants contend that Claims 5 and 13 properly provide additional limitations to some of the elements of the independent claims but do not exclude the presence of a required element of the independent claims.

The Examiner has rejected Claims 1-9, 11-15, and 17-21 under 35 U.S.C. §112, second paragraph stating

“Claims are indefinite in scope because the Markush selection of polymer present in addition to the required PPO or PPO plus HIPS plastics closes the claims to the presence of other polymers. Therefore the impact modifier terminology which is intended according to the disclosure on page 7 to encompass polymeric impact modifiers renders ambiguous the actual preclusion of other resins by the Markush group”

(Paper 17, page 1). Applicants have amended the independent claims to more particularly point out and distinctly claim the invention.

The Examiner has further rejected Claims 1-9, 11-15, and 17-21 under 35 U.S.C. §112, second paragraph because, in the Examiner's opinion, the claims are unsupported in not reciting the minimal concentration of the additives in an amount sufficient to provide the indicated effect. The independent claims have been amended to particularly recite that the amount of flame retardant is that amount sufficient to impart a degree of flame retardancy to the composition to pass the UL 2335 protocol for pallets.

Finally, The Examiner has rejected Claims 1-9, 11-15, and 17-21 under 35 U.S.C. §112, second paragraph due to the recitations “blends containing polycarbonate resin” and

“blends containing polyetherimide resin” lack clarity. The Examiner contends that the remainder of the blend is infinite in scope. Applicants respectfully disagree.

The claims must be interpreted as one of ordinary skill in the art would understand them in light of the Specification. Applicants contend that one of ordinary skill in the art would readily understand that “blends containing polycarbonate resin” and “blends containing polyetherimide resin” is not indefinite because one of ordinary skill in the art would readily understand “blends containing polycarbonate resin” and “blends containing polyetherimide resin” to mean blends of these particular resins and other compatible resins or additives as practiced in the art. Hence, the scope is not infinite and the claims are definite.

2. Claim Rejections Under 35 U.S.C. § 103(b)

Claims 1-6, 9, 11-13 and 17-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U. S. Patent No. 5,165,990 to Nakano and U. S. Patent No. 4,375,265 to van de Wetering et al. taken with U. S. Patent No. 3,814,031 to Fowler, U. S. Patent No. 4,007,694 to Fowler, U. S. Patent No. 3,707,127 to Palfey, U. S. Patent No. 5,492,069 to Alexander, U. S. Patent No. 5,334,636 to Fujii et al., and U. S. Patent No. 4,692,490 to Abolins. Claims 7, 8, 14, and 15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U. S. Patent No. 5,165,990 to Nakano and U. S. Patent No. 4,375,265 to van de Wetering et al. taken with U.S. Patent Nos. 3,852,242 and 3,855,178 to White in view of U.S. Patent No. 5,492,069 to Alexander. The Examiner contends that the primary references disclose that it is conventional to utilize compositions comprising polyphenylene ether as the predominant resin in making compositions suitable as molded pallets. The secondary references have been cited for their teachings regarding polycarbonate, vinyl

aromatic graft copolymers, impact modifiers, thermosetting resins, polyetherimide and high impact polystyrene.

Prior to amendment, all of the claims required the presence of polyphenylene ether. Independent claims 1 and 11 have been amended so that they no longer require the presence of polyphenylene ether. Independent Claims 17 and 23 require the presence of polyphenylene ether resin but do not require the presence of any of the resins of the Markush group (polycarbonate, blends containing polycarbonate, polyetherimide, blends containing polyetherimide, vinyl aromatic graft copolymers and thermosetting resins). Due to the amendment of the claims these groups of claims will be argued separately.

Claims 1 and 11 as indicated above are directed to a plastic pallet and a method for making a plastic pallet wherein the plastic pallet meets or exceeds the UL 2335 protocol and comprises at least one flame retardant, at least one impact modifier and one or more resins selected from the group consisting of polycarbonate, blends containing polycarbonate, polyetherimide, blends containing polyetherimide, vinyl aromatic graft copolymers and thermosetting resins. The pallet is made by injection molding.

van de Wetering discloses at Col. 2, lines 33-36:

The foam plastic can be any thermoplastic material such as polycarbonate, polypropylene, polyacetal, polyamid, or polyphenylene oxide but most commonly high density polyethylene.

van de Wetering discloses nothing further with regard to the material employed to make the one-piece molded pallet and in particular does not disclose desired characteristics beyond the ability to foam. Thus, van de Wetering provides no motivation to combine its teaching with that of any other reference with regard to the plastic.

Nakano discloses a stampable sheet that can be used in applications such as pallets. The stampable sheet comprises “a styrene polymer having a syndiotactic configuration” and a fibrous reinforcing material (col. 2, lines 16-21). The stampable sheet may further comprise “a polymer having a polar group which contains polyphenylene ether or polyphenylene ether and a styrene component” (col. 3, lines 58-61). The polymer having a polar group is employed in a minor amount to improve adhesion of the syndiotactic polystyrene to the fibrous reinforcing material (Col. 3, lines 56-61). Other thermoplastic resins may also be blended including polycarbonate, acrylonitrile-butadiene-styrene copolymer, and rubber like elastomers(col. 9, line 26 thru col. 10, line 16 and col. 11, 6-56). Nakano additionally discloses that flame retardants may also be part of the composition of the stampable sheet (col. 11, line 57 to col. 12, line 39). Nakano teaches forming the stampable sheet by obtaining sheets of the plastic material and laminating these sheets to sheets of the fibrous material. The stampable sheet can then be press molded into the desired shape (col. 13, line 16 to col. 14, line 54).

U. S. Patent Nos. 3,814,031 and 4,007,694 to Fowler disclose a plastic pallet. Fowler (031) discloses at col. 6, lines 7-20 that thermosetting as well as thermoplastics may be used but makes no mention of impact modifiers or flame retardants. A similar disclosure is made in Fowler (694) at col. 3, lines 18-33.

U.S. Patent No. 5,492,069 to Alexander discloses useful materials for a plastic pallet at col. 7, lines 2-30. Alexander is particularly directed to recycled or recyclable plastics but is silent with regard to flame retardants and impact modifiers.

U.S. Patent No. 3,707,127 to Palfey discloses at Col. 4, lines 32-35 a plastic pallet that is made from a flat plastic sheet of acrylonitrile-butadiene-styrene copolymer, polyethylene, or high impact polystyrene and does not disclose the presence of flame retardants or impact modifiers.

U.S. Patent Nos. 3,852,242 and 3,855,178 to White have been cited for their teachings regarding combinations of polyphenylene ether and polyetherimide and does not discuss flame retardants or impact modifiers.

The remaining secondary references, Fujii et al. and Abolins, are directed to polyphenylene ether compositions and as such are not relevant to amended Claims 1 and 11.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

Further, even assuming that all elements of an invention are disclosed in the prior art, an Examiner cannot establish obviousness by locating references that describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would have impelled one skilled in the art to do what the patent applicant has done. *Ex parte Levengood*, 28 U.S.P.Q. 1300 (Bd. Pat. App. Int. 1993). The references, when viewed by themselves and not in retrospect, must suggest the invention. *In Re Skoll*, 187 U.S.P.Q. 481 (C.C.P.A. 1975).

As alluded to above, the combination of van de Wetering with Fowler (031), Fowler (694), Alexander, Palfey, and White (242 and 178) either singly or in combination fails to

provide all the elements of the instant claims, particularly the flame retardant and impact modifier. Thus van de Wetering in combination with the secondary references cannot provide adequate basis for a rejection of Claims 1, 2, 4-6, 9 and 11-13 under 35 U.S.C. §103(a).

Applicants assert that there is no motivation to combine van de Wetering and Nakano. Nakano discloses a plastic composition useful in forming sheets for lamination. The plastic sheets are laminated with fibrous filler to form stampable sheets that can then be formed into a plastic pallet. Nakano does not teach or suggest that the disclosed plastic composition can be employed in injection molding. In contrast van de Wetering discloses a pallet made from a foamed plastic that is injection molded. As is well known in the art, the characteristics of compositions useful in lamination such as intrinsic viscosity and flow are different than those useful in injection molding. Therefore, one of ordinary skill in the art would have no motivation to combine the teachings of van de Wetering and Nakano.

Applicants further assert that Nakano is non-analogous art. In *In re Clay*, 966 F.2d 656, 23 USPQ2d 1058 (Fed. Cir. 1992), the court held the prior art references to be nonanalogous to the claimed invention even though both were used in the petroleum industry and both involved handling petroleum products in volumetric enclosures. The claimed invention was a method for *storing refined* petroleum products in a *man-made* storage tank. The references were to a method for *extracting crude* oil from *porous* hydrocarbon bearing *natural underground* formations. The italicized feature, the court said, show a different “field of endeavor” and different “purposes,” which defeat the possibility of dealing with or solving a common problem. Similar to *In re Clay*, the plastic composition of Nakano is

directed to making a *stampable sheet by lamination*, which can then be employed in a variety of applications one of which is a pallet. Key features of the stampable sheet for these various applications are heat resistance, impact resistance, dimensional stability and dielectric properties (col. 2, lines 4-7). In contrast the instant claims are directed to a *plastic pallet which meets or exceeds the UL 2335 protocol*. Thus the field of endeavor of Nakano is laminated materials whereas the field of endeavor of the instant application is fire resistant plastic pallets. Clearly, the concerns and issues of these two different fields of endeavors are divergent and as such Nakano represent non-analogous art.

Claim 17 is directed to a plastic pallet comprising a polyphenylene ether resin, a high impact polystyrene, at least one flame retardant, and at least one impact modifier. As discussed above van de Wetering does not disclose the elements of an impact modifier or a flame retardant. These deficiencies are not corrected by Fowler (031), Fowler (694), Alexander, Palfey, White (242) or White (178). Furthermore there is no motivation to combine van de Wetering with Nakano, as discussed above, and Nakano is non-analogous art.

The remaining references, Abolins and Fujii et al. both disclose polyphenylene ether compositions. Abolins discloses a flame retardant polyphenylene ether composition containing polyphenylene ether and high impact polystyrene. The flame retardancy is provided by a combination of polybrominated 1,4-diphenoxybenzene and antimony oxide.

Fujii et al. disclose a polyphenylene ether composition comprising a polyphenylene ether resin, a styrene resin, an impact improving polymer, a mineral filler, carbon black and a



plasticizer. The composition of Fujii et al. is characterized in that the surface resistivity is lower than  $10^{10}$  ohms.

Applicants assert that there is no motivation to combine van de Wetering with either Abolins or Fujii et al. As discussed above, van de Wetering provides only a minimal teaching with regard to the plastic used to make the disclosed plastic pallet and provides no motivation to employ polyphenylene ether compositions with enhanced characteristics as taught by Abolins and Fujii et al. Neither Abolins nor Fujii et al. teach that the disclosed compositions could be useful in making plastic pallets. Thus, Applicants believe that van de Wetering cannot be combined with either Abolins or Fujii et al. Applicants therefore respectfully request withdrawal of the rejection and allowance of Claims 17-21.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise,  
please charge them to Deposit Account No. 07-0862 maintained by the Assignee.

Respectfully submitted,

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A marked up version of claims 1,11 and 17 follows:

1. (Four times amended) A plastic pallet comprising:

~~polyphenylene ether resin or a blend containing polyphenylene ether resin and high impact polystyrene; and one or more other resins selected from the group consisting of:~~

polycarbonate resin,  
blends containing polycarbonate resin,  
vinyl aromatic graft copolymer resin,  
polyetherimide resin,  
blends containing polyetherimide resin, and  
thermosetting resins;

at least one flame retardant in an amount sufficient to impart a degree of flame retardancy to the pallet to pass UL 2335 protocol for pallets; and

at least one impact modifier;

wherein the pallet meets or exceeds Underwriters Laboratory UL 2335 protocol for pallets.

11. (Four times amended) A method for making a plastic pallet comprising:

~~molding a composition comprising polyphenylene ether resin or a blend containing polyphenylene ether resin and high impact polystyrene; at least one flame retardant in an amount sufficient to impart a degree of flame retardancy to the pallet to pass UL 2335 protocol for pallets; at least one impact modifier; and one or more other resins selected from the group consisting of:~~

polycarbonate resin,  
blends containing polycarbonate resin,  
vinyl aromatic graft copolymer resin,  
polyetherimide resin,  
blends containing polyetherimide resin, and  
thermosetting resins; and

wherein the pallet meets or exceeds Underwriters Laboratory UL 2335 protocol for pallets.

17. A plastic pallet comprising:

~~a blend comprising polyphenylene ether resin; and~~

a high impact polystyrene;

at least one flame retardant in an amount sufficient to impart a degree of flame retardancy to the pallet to pass UL 2335 protocol for pallets; and

at least one impact modifier;

wherein the pallet meets or exceeds Underwriters Laboratory UL 2335 protocol for pallets.